

through serial I/O 131 to terminal 1. In terminal 1, when the coincidence signal is received by serial I/O 114, it is given to control section 118. As a result, it is confirmed that the PIN preliminarily written in IC card 5 and the PIN input from terminal 1 are identical, that is, YES is yielded step A1 (FIG. 19). Then, the routine goes to step A2. In step A2 the contents of registers 112 and 115 are cleared by the initialization signal supplied from control section 118. The routine then goes to step A3, in which register 112 is set to the write mode by read/write control signal 120 supplied from control section 118.

In this state, the IC card holder inputs a new PIN from input section 111 to alter the PIN data. The routine then goes to step A4, in which the PIN is written in register 112. In this case, the number of digits of the new PIN is counted by counter 110, and this number is displayed by digit number display section 126A in display section 126, not in numerals, but in symbols, such as " \*" for the first digit, " \*\*" for the first two digits, and so forth. This eliminates the possibility that any other person can see the PIN, which is a numerical code.

The routine then goes to step A5. In step A5, upon inputting all data into input section 111, that is, when the YES key on keyboard 2 of terminal 1 is pushed, an input end signal 127 is provided from input section 111. As a result, counter 110 is stopped, and the internal count is reset. Also, control section 118 causes the next operation.

Then, step A6 is executed, in which registers 112 and 115 are set to the read-out mode by read/write control signals 120 and 121 supplied from control section 118. Further, the data stored in registers 112 and 115 is supplied through select signals 122 and 123 to distributors 113 and 117. In this state, the pieces of data stored in registers 112 and 115 are compared by comparator 114. Since in the content of register 115 has been cleared by the first input PIN, non-coincidence is detected. The routine goes to step A7. In step A7, the non-coincidence output of comparator 114 is supplied to data selector 124. Data selector 124 selects from display data memory 125 a message instructing the card holder to input PIN again. This message is displayed on message control section 126A.

The routine then goes to step A8. In step A8, in response to the non-coincidence output of comparator 114, control section 118 provides select signal 122 to data distributor 113 so that register 112 is connected to register 115. Further, read/write control signal 121 is supplied from controller 118 to register 115, setting register 115 to the write mode. As a result, the content of register 112 is transferred to register 115.

In this state, the routine returns to step A3. In step A3, the PIN input afresh by the IC card holder is written in register 112. Subsequently, the routine goes through steps A4 and A5 to step A8, whereby the pieces of data in stored registers 112 and 115 are compared. When these pieces of data coincide, the routine goes to step A9. In step A9, comparator 114 gives a coincidence signal data selector 124. Data selector 124 selects a message, for instance, "PIN Has been Confirmed and Is being Registered," from display data memory 125. The selected message is supplied to display section 126 and is displayed by message display section 126A. The routine then proceeds to step A10. In step A10, the coincidence signal output by comparator 114 supplied to control section 118, and a select signal

123 is supplied to data distributor 117. The data stored in register 115 is thereby supplied to the IC card through serial I/O 116.

In IC card 5, the data is supplied through serial I/O 131. As a result, a write control signal is supplied from write control section 137 to PIN memory 141 under control of control section 135. Thus, the data from terminal 1 is written in PIN memory 141, whereby the PIN alteration is completed.

While the description so far was concerned with the alteration of the PIN, the same procedure is taken in case of registration of a new PIN. More specifically, when the previously known IPIN is input from input section 111, it is written in register 112 under the control of a command from control section 118, to be supplied through data distributor 113 to serial I/O 116 and thence supplied to IC card 5. In IC card 5, when the data is supplied through serial I/O 131 shown in FIG. 18, it is latched in data latch section 136 under the control of a command from control section 135, and is compared with the IPIN written in IPIN memory 140. When the compared IPIN's coincide, a coincidence signal is supplied to control section 135, and the PIN data is supplied through serial I/O 131 to the terminal under the command of control section 135. In terminal 1, the coincidence signal is received in serial I/O 116 and is supplied to control section 118. As a result, it is confirmed that the PIN preliminarily written in IC card 5 and IPIN input from the terminal are identical. Hence, it becomes possible to input the "PIN". Thereafter, the PIN is input twice, as in re-registering the PIN.

As has been shown in the above embodiment, not only registration of a new PIN but also the alteration of the PIN is possible. In these two registrations, the PIN is input twice to permit registration. Thus, it is possible to prevent the inputting of a wrong PIN, ensuring a reliable and correct registration of the PIN in IC card 5. Further, since the input PIN is not displayed in numerals on the display section, but in symbols, there is no read-out of the PIN visible to another nearby person. Total security can thus be ensured.

The above embodiment is by no means limitative. Various changes and modifications are possible without departing from the scope and spirit of the invention. For example, the PIN can be input more than twice. Further, the invention is applicable not only to the registration of a PIN in the IC card but also to registration of other data.

#### Advantages of the Second Embodiment

With the second embodiment of the IC card system, the PIN is input at least twice from the terminal, and these PIN's are stored in separate memory means. The pieces of data in these memory means are compared. When they are identical, the PIN is registered in the IC card.

Thus, with the second embodiment it is possible to ensure an accurate registration of the PIN in the IC card by the IC card holder. In addition, the alteration of the PIN becomes possible when predetermined conditions are met. It is thus possible to reliably prohibit any subsequent use of the IC card. This improves the security of the system.

What is claimed is:

1. A customer service system for use in an IC card system comprising:
  - a customer's IC card including at least an IC circuit having first memory means for storing the personal